Self Seeding Pulsed Non-Linear Resonant Cavity

Abstract

This invention provides a means for generating multiple wavelengths in an integrated manner using a resonant cavity containing dispersion shifted non-linear medium and coupled to a pulsed laser source. The dispersion shifted non-linear medium is seeded by at least some of the desired wavelengths. The laser source emits radiation at a particular wavelength and is pulsed in a manner synchronously related to the round trip time of the resonant cavity. By means of wave mixing, such as four wave mixing, the dispersion shifted non-linear medium produces a set of discrete wavelengths. The reflective elements of the resonant cavity are designed to contain the radiation of the laser sources within the resonant cavity and to transmit an equal amount of each of the generated set of wavelengths.